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Re: U.S. Patent Application Serial No. 10/679,756 (Atty. Docket No. BIC-018)

Per the telephone interview on October 21, 2009, I am sending a marked version of the claims.

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AMENDMENTS TO THE CLAIMS

1. (Currently Amended) A fuel supply containing a fuel for use by a fuel cell comprising:

a first fuel compartment containing the fuel, a second reactant compartment and a third reaction chamber;

wherein the fuel is transported by a pump from the first fuel compartment to the third reaction chamber, where the fuel reacts to form reactants comprising hydrogen gas and liquid reactant, and thereafter the hydrogen gas and liquid reactant are transported through a conduit to the second reactant compartment, wherein the pump meters a rate of flow of fuel from the first fuel compartment to the third reaction chamber; and

wherein the second reactant compartment is at least partially inside a housing member and comprises a gas permeable, liquid impermeable membrane disposed on a wall of the second reactant compartment, and the hydrogen gas passes through the gas permeable, liquid impermeable membrane and out of the second reactant compartment and is contained in an internal ~~to a~~ spacing located between ~~enclosed by~~ the second reactant compartment ~~component~~ and the housing member and then to the fuel cell and the liquid reactant remains in the second reactant compartment.

2. (Canceled)

3. (Previously Presented) The fuel supply of claim 1, wherein the fuel supply further comprises a valve and the valve selectively allows hydrogen gas to pass through to the fuel cell.

4. (Canceled)

5. (Previously Presented) The fuel supply of claim 1 further comprising an outer casing, wherein the outer casing is substantially impermeable to hydrogen gas.

6. (Original) The fuel supply of claim 5, wherein hydrogen gas is stored within the outer casing.

7. (Previously Presented) The fuel supply of claim 1, wherein the walls of the first fuel compartment and the second reactant compartment are integrally formed.

8. (Previously Presented) The fuel supply of claim 7, wherein the first fuel compartment and the second reactant compartment are separated by a movable wall.

9. (Previously Presented) The fuel supply of claim 8, wherein the movable wall forms a seal with the walls of the second reactant compartment and first fuel compartment.

10. (Previously Presented) The fuel supply of claim 9, wherein the seal comprises a wiper or an o-ring pressing against the walls of the second reactant compartment and first fuel compartment.

11. (Original) The fuel supply of claim 1, wherein the fuel comprises sodium borohydride.

12. (Previously Presented) The fuel supply of claim 11, wherein the liquid reactant comprises sodium borate.

13. (Previously Presented) The fuel supply of claim 11, wherein the third reaction chamber comprises platinum or ruthenium.

14. (Original) The fuel supply of claim 1, wherein the fuel comprises methanol.

15. (Previously Presented) The fuel supply of claim 1, wherein the third reaction chamber comprises a catalyst.

16. (Previously Presented) The fuel supply of claim 1, wherein the first fuel compartment comprises a liner and the fuel is contained in the liner.

17. (Previously Presented) The fuel supply of claim 1, wherein the second reactant compartment comprises a liner and the liquid reactant and hydrogen gas are contained in the liner.

18-73. (Canceled)

74. (Canceled)

75. (Previously Presented) The fuel supply of claim 1, wherein a pressure differential is required for hydrogen gas to pass through the gas permeable, liquid impermeable membrane so that a pressure in the second reactant compartment is higher than a pressure in the first fuel compartment.

76. (Currently Amended) The fuel supply of claim 1, wherein the second reactant compartment further comprises ~~a pressure differential device~~ a poppet valve, a porous member, a filler or a foam, ~~said pressure differential device~~ which requires a pressure differential for hydrogen gas to pass therethrough to ensure that a pressure in the second reactant compartment is higher than a pressure in the first fuel compartment.

77. (Canceled)

78. (Previously Presented) The fuel supply of claim 1 further comprising a one-way valve is disposed between the third reaction chamber and the first fuel compartment.

79. (Withdrawn) The fuel supply of claim 1 further comprising a channel comprises a wicking material to transport fuel from the first fuel compartment to the third reaction chamber.

80. (Previously Presented) The fuel supply of claim 1, wherein the first fuel compartment and the second reactant compartment are housed in an outer casing.

81. (Previously Presented) The fuel supply of claim 80, wherein the third reaction chamber is housed in the outer casing.

82. (Currently Amended) A fuel supply containing a fuel for use by a fuel cell comprising:

a first fuel compartment containing the fuel, a second reactant compartment, and a third reaction chamber;

wherein the fuel is transported from the first fuel compartment to the third reaction chamber, where the fuel reacts to form hydrogen gas and liquid reactant, and thereafter the hydrogen gas and liquid reactant are transported to the second reactant compartment,

wherein the second reactant compartment is at least partially inside a housing member and comprises a gas permeable, liquid impermeable membrane disposed on a wall of the second reactant compartment and fluidly connecting the second reactant compartment to the housing member, and the hydrogen gas passes through the gas permeable, liquid impermeable membrane and out of the second reactant compartment and is contained in an internal ~~to a~~ spacing located between ~~enclosed by~~ the second reactant compartment ~~component~~ and the housing member and then to the fuel cell and wherein a pressure differential is required for hydrogen gas to pass through the gas permeable, liquid impermeable membrane so that a pressure in the second reactant compartment is higher than a pressure in the first fuel compartment.

83. (Currently Amended) The fuel supply of claim 82, wherein the second reactant compartment further comprises ~~a pressure differential device~~ a poppet valve, a porous member, a filler or a foam, ~~said pressure differential device~~ which requires a pressure differential for hydrogen gas to pass therethrough.

84. (Canceled)

85. (Previously Presented) The fuel supply of claim 82, wherein the first fuel compartment and the second reactant compartment are housed in an outer casing.

86. (Withdrawn) The fuel supply of claim 85, wherein the third reaction chamber is housed in the outer casing.

87. (Previously Presented) The fuel supply of claim 85, wherein the outer casing is substantially impermeable to hydrogen gas.

88. (Previously Presented) The fuel supply of claim 87, wherein hydrogen gas is stored within the outer casing.

89. (Previously Presented) The fuel supply of claim 82, wherein as a volume of the first fuel compartment decreases, a volume of the second reactant compartment increases.

90. (Previously Presented) The fuel supply of claim 82 further comprising a one-way valve is disposed between the third reaction chamber and the first fuel compartment.

91. (Previously Presented) The fuel supply of claim 82 further comprising a pump to transport fuel from the first fuel compartment to the third reaction chamber.

92. (Currently Amended) A fuel supply containing a fuel for use by a fuel cell comprising:

a first fuel compartment containing the fuel, a second reactant compartment, and a third reaction chamber, wherein the second reactant compartment is at least partially inside a housing member and;

wherein the fuel is transported from the first fuel compartment to the third reaction chamber, where the fuel reacts to form hydrogen gas and liquid reactant, and thereafter the hydrogen gas and liquid reactant are transported to the second reactant compartment,

wherein the hydrogen gas passes out of the second reactant compartment and is contained in an internal ~~to a~~ spacing located between ~~enclosed by~~ the second reactant compartment ~~component~~ and the housing member and then to the fuel cell and wherein the second reactant compartment comprises ~~a pressure differential device~~ a poppet valve, a porous member, a filler or a foam fluidly connecting the second reactant compartment to the housing member~~, said pressure differential device~~ which requires a pressure differential for hydrogen gas to pass therethrough to ensure that a pressure in the second reactant compartment is higher than a pressure in the first fuel compartment.

93. (Previously Presented) The fuel supply of claim 92, wherein the second reactant compartment comprises a gas permeable, liquid impermeable membrane, and the hydrogen gas passes through the gas permeable, liquid impermeable membrane to the fuel cell.

94. (Canceled)

95. (Previously Presented) The fuel supply of claim 92, wherein the first fuel compartment and the second reactant compartment are housed in an outer casing.

96. (Previously Presented) The fuel supply of claim 95, wherein the third reaction chamber is housed in the outer casing.

97. (Previously Presented) The fuel supply of claim 92, wherein as a volume of the first fuel compartment decreases, a volume of the second reactant compartment increases.

98. (Previously Presented) The fuel supply of claim 92 further comprising a one-way valve is disposed between the third reaction chamber and the first fuel compartment.

99. (Previously Presented) The fuel supply of claim 92 further comprising a pump to transport fuel from the first fuel compartment to the third reaction chamber.

100. (Withdrawn – Currently Amended) A fuel supply containing a fuel for use by a fuel cell comprising:

a first fuel compartment containing the fuel, a second reactant compartment, and a third reaction chamber, wherein the second reactant compartment is at least partially inside a housing member;

wherein the fuel is transported through a channel from the first fuel compartment to the third reaction chamber, where the fuel reacts to form hydrogen gas and liquid reactant, and thereafter the hydrogen gas and liquid reactant are transported to the second reactant compartment, wherein said channel comprises a wicking material,

wherein the hydrogen gas passes out of the second reactant compartment and is contained in an internal ~~to a~~ spacing located between ~~enclosed by~~ the second reactant compartment ~~component~~ and the housing member and then to the fuel cell through a shut-off valve, wherein when the shut-off valve is closed the back pressure stops the flow of fuel into the third reaction chamber to stop the reaction of fuel.

101. (Withdrawn) The fuel supply of claim 100, wherein the second reactant compartment comprises a gas permeable, liquid impermeable membrane, and the hydrogen gas passes through the gas permeable, liquid impermeable membrane to the fuel cell.

102. (Withdrawn) The fuel supply of claim 101, wherein a pressure differential is required for the hydrogen gas to pass through the gas permeable, liquid impermeable membrane.

103. (Withdrawn – Currently Amended) The fuel supply of claim 100, wherein the second reactant compartment comprises ~~a pressure differential device~~ a poppet valve, a porous member, a filler or a foam, ~~said pressure differential device~~ which requires a pressure differential for hydrogen gas to pass therethrough to ensure that a pressure in the second reactant compartment is higher than a pressure in the first fuel compartment.

104. (Canceled)

105. (Withdrawn) The fuel supply of claim 100, wherein the first fuel compartment and the second reactant compartment are housed in an outer casing.

106. (Withdrawn) The fuel supply of claim 105, wherein the third reaction chamber is housed in the outer casing.

107. (Withdrawn) The fuel supply of claim 100, wherein as a volume of the first fuel compartment decreases, a volume of the second reactant compartment increases.

108. (Withdrawn) The fuel supply of claim 100 further comprising a one-way valve is disposed between the third reaction chamber and the first fuel compartment.

109. (Withdrawn) The fuel supply of claim 100 further comprising a pump to transport fuel from the first fuel compartment to the third reaction chamber.

110. (Withdrawn) The fuel supply of claim 82, wherein the first fuel compartment is connected to the third reaction chamber by a channel and the channel comprises a wicking material to transport fuel from the first fuel compartment to the third reaction chamber.

111. (Withdrawn) The fuel supply of claim 92, wherein the first fuel compartment is connected to the third reaction chamber by a channel and the channel comprises a wicking material to transport fuel from the first fuel compartment to the third reaction chamber.

112. (Currently Amended) A fuel supply containing a fuel for use by a fuel cell comprising:

a first fuel compartment containing the fuel, a second reactant compartment, and a third reaction chamber, wherein the second reactant compartment is at least partially inside a housing member and;

wherein the fuel is transported from the first fuel compartment to the third reaction chamber, where the fuel reacts to form hydrogen gas and liquid reactant, and thereafter the hydrogen gas and liquid reactant are transported to the second reactant compartment and wherein the hydrogen gas passes out of the second reactant compartment and is contained in an internal ~~to~~ ~~a~~ spacing located between ~~enclosed by~~ the second reactant compartment ~~component~~ and the housing member and then to the fuel cell, and

wherein a single valve is positioned between the first fuel compartment and the third reaction chamber and wherein the valve is one-directional from the first fuel compartment to the third reaction chamber.

113. (Previously Presented) The fuel supply of claim 112, wherein the fuel is transported by a pump.

114. (Previously Presented) The fuel supply of claim 112, wherein the second reactant compartment comprises a gas permeable, liquid impermeable membrane.

115. (Currently Amended) The fuel supply of claim 112, wherein the second reactant compartment comprises ~~a pressure differential device~~ a poppet valve, a porous member, a filler or a foam, ~~said pressure differential device~~ which requires a pressure differential for hydrogen gas to pass therethrough to ensure that a pressure in the second reactant compartment is higher than a pressure in the first fuel compartment.

116. (Canceled)